

Application No.: 10/563,255
Art Unit: 3746

Amendment under 37 CFR §1.116
Attorney Docket No.: 053549

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): An evacuation apparatus comprising:

a booster pump connected to a vacuum chamber, said booster pump having a pair of multistage Roots-type pump rotors comprising an inlet-side rotor and an outlet-side rotor, an axial width of said inlet-side rotor being larger than an axial width of said outlet-side rotor; and

a main pump connected to said booster pump, said main pump having a pair of multistage pump rotors;

wherein said main pump is arranged downstream of said booster pump, [[and]]

wherein said booster pump has a pumping speed high enough to increase a pumping speed of said main pump.

2. (Cancelled).

3. (Previously Presented): An evacuation apparatus according to claim 1, wherein said booster pump is started after said main pump is started.

4. (Previously Presented): An evacuation apparatus according to claim 1, wherein a rotational speed of said multistage Roots-type pump rotors is controlled based on a temperature of a gas delivered by said evacuation apparatus, a pressure of the gas, a temperature of a rotor

casing for housing said multistage Roots-type pump rotors, or electric current flowing into a motor for rotating said Roots-type multistage pump rotors.

5. (Previously Presented): An evacuating apparatus according to claim 1, wherein said booster pump and said main pump are accommodated in a single enclosure.

6. (Previously Presented): An evacuation apparatus according to claim 1, wherein said main pump includes a brushless DC motor.

7. (Withdrawn): A method of operating an evacuation apparatus having a booster pump connected to a vacuum chamber and a main pump connected to the booster pump, the booster pump having a pair of multistage pump rotors, said method comprising:

starting the main pump;

operating the main pump at a rated rotational speed;

starting the booster pump after a predetermined period of time has passed from said starting the main pump;

operating the booster pump at a constant rotational speed; and

when a pressure of a gas in the vacuum chamber is lowered to a predetermined pressure, increasing the rotational speed of the booster pump.

8. (Currently Amended): An evacuation apparatus according to claim 1, wherein ~~said multistage Roots-type pump rotors are each two-stage Roots-type pump rotors having an inlet-side rotor and an outlet-side rotor, and~~ a ratio of the ~~the~~ ~~axial width of said inlet-side rotor to~~ ~~the~~ ~~axial width of said outlet-side rotor is in a range of 2:1 to 10:1.~~

9. (Previously Presented): An evacuation apparatus according to claim 8, wherein the ratio is in a range of 5:1 to 10:1.